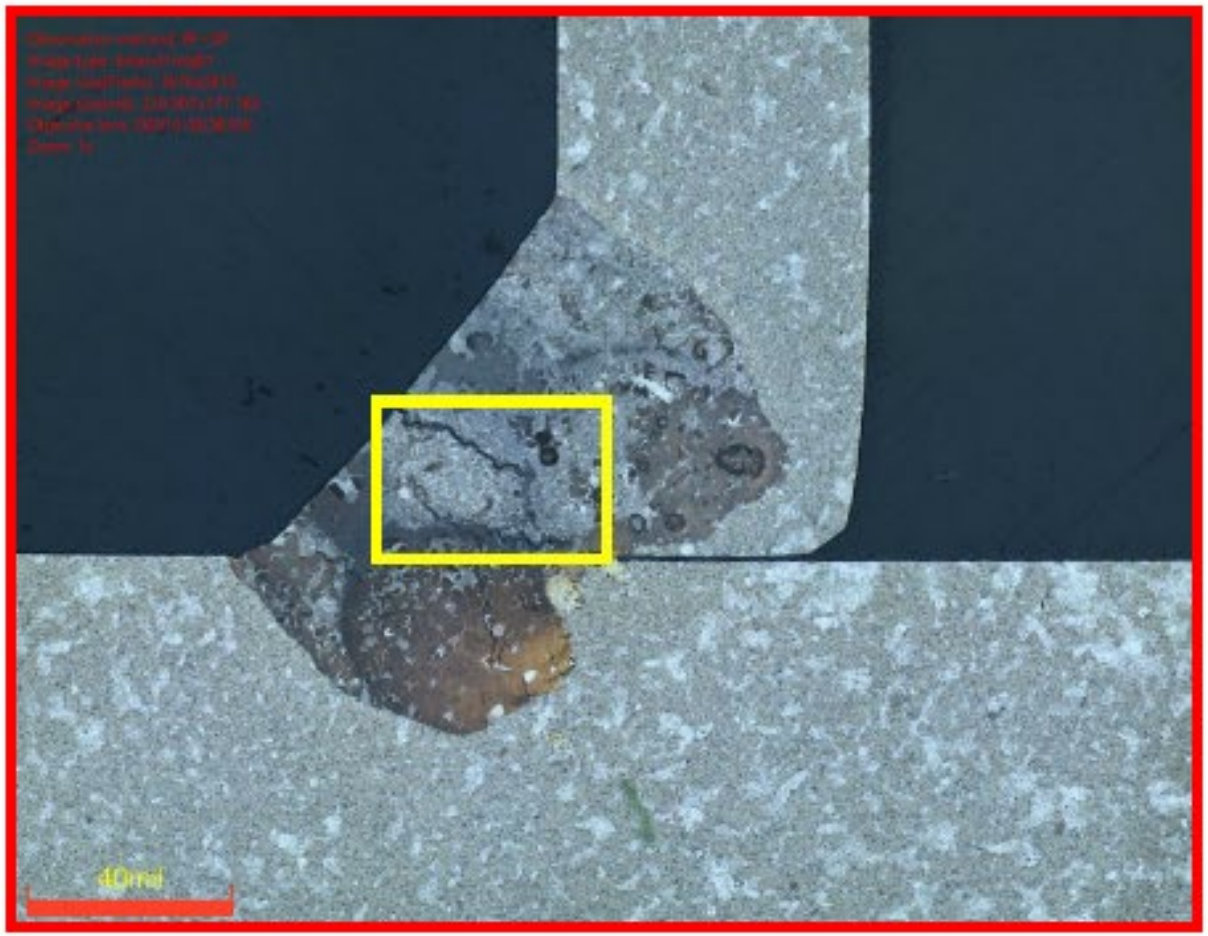
Handheld Laser Welding for Cabinets & Enclosures

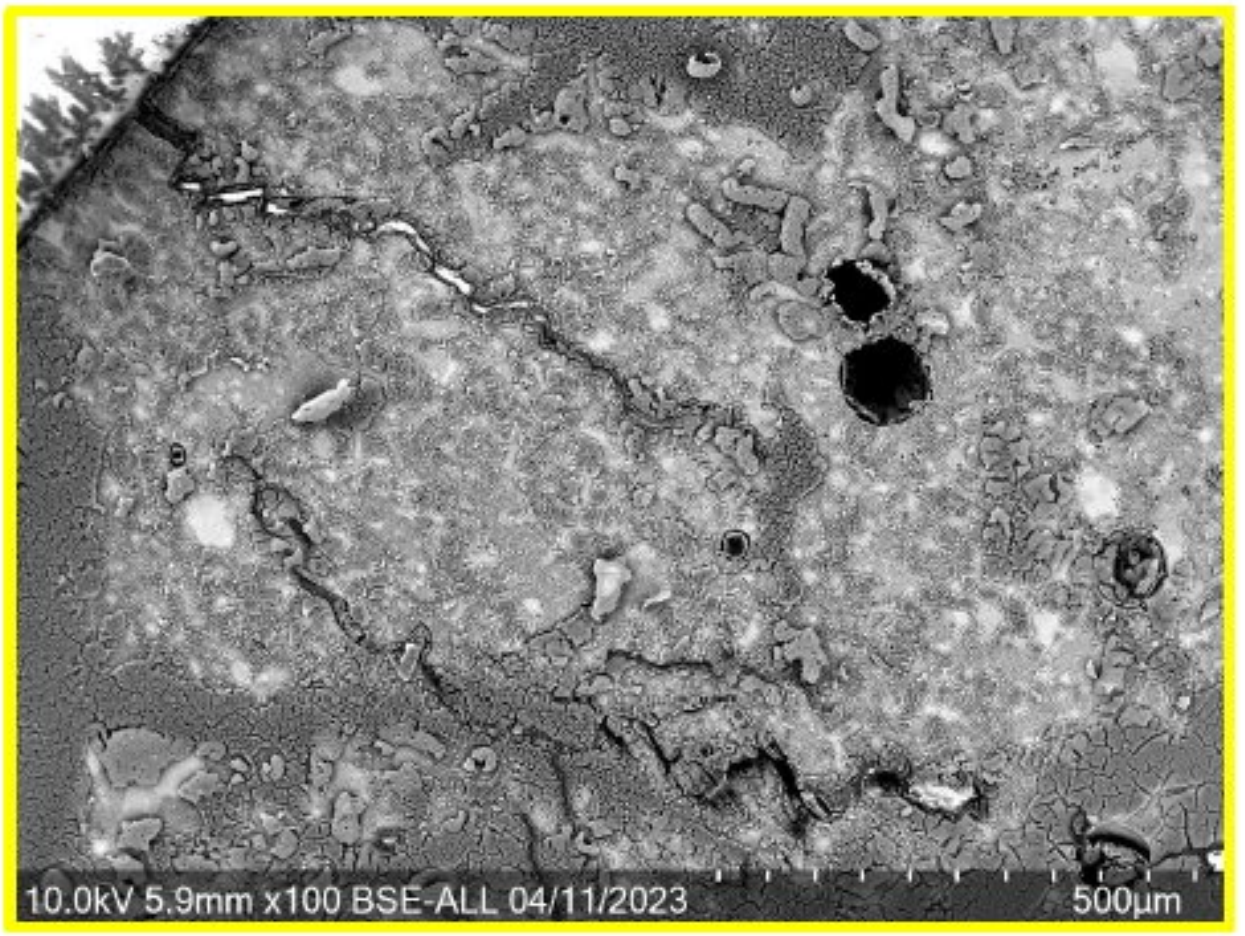
Study of processes and parameters for 5052 aluminum sheet metal welding using 5356 filler metal

PROJECT INFORMATION	OBJECTIVE
Prime/Lead: Schweitzer Engineering Laboratories, Inc. (SEL) Team Members: TBD Duration: 12 months	• **Produce quality fillet and groove welds in line with the requirements of TP-248/278** • Evaluate welding technology for shipyard sub-tier cabinet/enclosure suppliers
DELIVERABLES/BENEFITS/ROI	**FINANCIAL**
• Welding procedure for handheld laser welding 5052 aluminum with 5356 filler metal • Destructive and non-destructive test results • Report delivered to shipyards, sub-tier suppliers, and laser welder manufacturer	Program Funds: $120k

Context and Motivation

“Despite having 20 years of varied welding experience, the speed and ease of use of this welding process surprised me. No other process I've used has been this fast, required less experience and produced such low distortion welds on aluminum or steel."




10.0kV 5.9mm x100 BSE-ALL 04/11/2023
500µm

Deliverables

- Weld procedure for handheld laser welding 5052 aluminum with 5356 filler metal
- Destructive and non-destructive test results
  - Tensile, bend, penetrant, radiographic, and visual
- Report delivered to shipyards, sub-tier suppliers, and laser welder manufacturer

Request for Input

- Feedback on concept, advice on technology transfer
- NSRP Shipyard Delegate endorsement